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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/084,055	02/28/2002	Philippe Antoine	Q68686	6453

7590 08/12/2004

SUGHRUE MION, PLLC
2100 Pennsylvania Avenue, NW
Washington, DC 20037-3213

EXAMINER

NGUYEN, THUAN T

ART UNIT	PAPER NUMBER
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2685

DATE MAILED: 08/12/2004

7

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/084,055

Applicant(s)

ANTOINE ET AL.

Examiner

THUAN T. NGUYEN

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

*A person shall be entitled to a patent unless –
(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.*

2. Claims 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by Carr et al. (U.S. Patent No. 6,377,315 B1).

Regarding claim 1, Carr discloses a "multi-carrier receiver adapted to receive a multi-carrier signal and to demodulate data symbols from a set of carriers that constitute said multi-carrier signal, said multi-carrier receiver comprising antenna selection means to select at least two carriers as antennas for estimation of characteristics of a narrowband disturber, wherein said antenna selection means is adapted to select said at least two antennas amongst all carriers located inside a predetermined frequency band wherein power spectral density of said multi-carrier signal has to stay below a threshold value, and at least two carriers located outside said predetermined frequency band", i.e., multi carrier signals inside a predetermined frequency band can be selected at the radio receiver via selection process of antenna(s) of a dual conversion receiver (Figs. 1, 5, and col. 5/lines 22-42, col. 7/lines 39-49 & col. 7/line 62-col. 8/line 25, and col. 11/line 54 to col. 12/line 27) to keep the power spectral density of multi-carrier signal staying below a threshold value using a frequency synthesizer (col. 26/line 65 to col. 27/line 18) and VCO for controlling the threshold values (col. 48/lines 45-59) and at least two carriers are outside the predetermined frequency band (as shown in Fig. 4, F_{Rf} uses F_{Lo} to

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adjust the range within a threshold value, while the other two carriers F I and F IF are outside of the frequency range (see more at col. 11/lines 10-53).

As for claim 2, in view of claim 1, Carr further discloses "said multi-carrier receiver further comprises antenna reservation means, adapted to reserve said at least two carriers located outside said predetermined frequency band by assigning a substantially low amount of power and data bits to said at least two carriers", i.e., this process is performed by using the frequency planning and positioning the antenna(s) in the frequency converting stages of the receiver, i.e., namely, the front end with selectivity including the antenna reservation means (col. 7/line 39 to col. 8/line 35 & col. 10/line 60-col. 11/line 10).

As for claim 3, in view of claim 1, Carr further addresses "said at least two carriers are located at an equal distance of respective edges of said predetermined frequency band" (as shown in Fig. 4 with an equal distance of 455 kHz is shown between carriers).

Claim Rejections - 35 USC 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Carr et al. (U.S. Patent No. 6,377,315 B1).

Regarding claim 4, in further view of claim 3, Carr does not show "said distance equals 17 times 4.3125 kHz"; however, this is simple a matter of design choice for

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setting up the frequency distance between carriers, and the system administrator can easily do this based on their preferred system configuration. As taught in Carr's reference, also noted in the previous prior art of Figure 3, carrier frequency are separated by a delta f function as $(f1 - \Delta f)$ and $(f2 + \Delta f)$ and so on (Carr, col. 6/line 40 to col. 8/line 25). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Carr's system with known technique in assigning a frequency range between carrier signals as shown by Carr with a distance equals 17 times 4.3125 kHz as a preferred choice of assigning the frequency distance between carriers.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Vorenkamp et al (US Patent 6,285,865 B1), and Kooker et al (US Patent 6,760,230 B2) disclose apparatuses related to multi-carrier signal receiving.

6. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9306, (for Technology Center 2600 only)

*Hand-delivered responses should be brought to Crystal Park II,
2121 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).*

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tony Thuan Nguyen whose telephone number is (703) 308-5860. The examiner can normally be reached on Monday-Friday from 9:30 AM to 7:00 PM, with alternate Fridays off.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the **Technology Center 2600 Customer Service Office** whose telephone number is **(703) 306-0377**.



TONY T. NGUYEN
PATENT EXAMINER

Tony T. Nguyen
Art Unit 2685
August 2, 2004